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An imprimitivity theorem for Hilbert modules

Mackey's imprimitivity theorem identifies those unitary representations of a group G that are induced from a representation of a subgroup H: the induced representations are precisely those that carry a compatible representation of the C^*-algebra $C_0(G/H)$. Rieffel later put this result into the broader context of induced representations of C^*-algebras: induced representations can in general be characterised by the existence of a compatible representation of an auxiliary C^*-algebra.

In this talk I shall discuss the related problem of recognising induced Hilbert C^*-modules. I shall explain why the natural auxiliary object entering into the characterisation of induced modules is a kind of C^*-coalgebra, rather than a C^*-algebra; and I will describe two examples in which these somewhat abstract co-algebraic objects can be put into a more familiar C^*-algebraic form.